# PARALLEL SENSORS: LAB NOTEBOOK WEEKLY SUMMARY

**Week 1 (1/6/2015-5/6/2015)**

1. Summer training, mainly for recalling the basic techniques

2. Discussion for the plan of the main project

**Week 2 (8/6/2015-12/6/2015)**

1. Transformed of the parts from kit plate that would be used

2. Constructed $P_{bad}$-$P_{lac}$ (pSB3K3-BBa_I0500-I13054) through digestion and ligation

3. Attempted to transform the parts of $P_{lux}$ and promoter BBa_J23101 and BBa_I13522, but failed

**Week 3 (15/6/2015-19/6/2015)**

1. Checked $P_{bad}$ by restriction check

2. Constructed intermediate part of $P_{lac}$ (pSB3K3-BBa_J04450-BBa_P0412) through digestion and ligation

3. Checked intermediate part of $P_{lac}$ by restriction check

4. Constructed $P_{bad}$-$P_{lac}$ and $P_{bad}$-$P_{lac}$
5. Failed to transform parts of $P_{lux}$ again

**Week 4 (29/6/2015-3/7/2015)**

1. Restriction checked $P_{bad}$-$P_{lac}$ and $P_{lac}$-$P_{bad}$

2. Constructed $P_{tet}$ through digestion and ligation

3. Prepared stock solutions for L-arabinose (1M) and IPTG (1M)

4. Prepared minimal medium

5. Constructed the part pSB3K3-BBa_J37032 for $P_{lux}$

6. Ordering primers for $P_{lux}$

**Week 5 (6/7/2015-11/7/2015)**

1. Checked the part pSB3K3-BBa_J37032 ($P_{lux}$ intermediate) by colony PCR and restriction check
2. Plate reading for $P_{lac}$ and $P_{bad}$
3. Failed to transform the template plasmid (BBa_I13018) for $P_{lux}$

**Week 6 (13/7/2015-18/7/2015)**

1. Made glycerol stock for final constructs $P_{bad}$, $P_{lac}$, $P_{bad}$-$P_{lac}$ and $P_{lac}$-$P_{bad}$
2. Plate reading for $P_{bad}$
3. Failed to transform the templates (BBa_A340620, BBa_S03119 and BBa_I13018) of $P_{lux}$
4. Streaked plates for those would be characterized and those which were old
5. Continued to build $P_{tet}$

**Week 7 (20/7/2015-24/7/2015)**

1. Checked $P_{tet}$ => proved to be correct by colony PCR and restriction check

2. Characterised $P_{lac}$ and $P_{bad}$ (wrong $P_{lac}$ was used => no result for that)
3. Transformed the $P_{lac}$ plamid to obtain cells will correct construct for characterization
4. Constructed $P_{tet}$-$P_{lac}$ via digestion and ligation
5. Made stock solution of aTc (1mM)
6. Functionality test of $P_{tet}$ by inoculating it with M9 minimal medium+aTc+KAN => successful

**Week 8 (27/7/2015-31/7/2015)**

1. $P_{tet}$-$P_{lac}$ res. checked
2. $P_{lac}$-$P_{bad}$ functionality test done
3. $P_{bad}$ better characterized
4. $P_{lac}$ characterization attempted, but error bar too large
5. Gibson assembly of $P_{lux}$ failed

**Week 9 (3/8/2015-8/8/2015)**

1. $P_{lac}$ characterized again, error bar still quite large

2. $P_{bad}$ characterized by overnight induction

3. Restriction checked $P_{lux}$

**Week 10 (10/8/2015-14/8/2015)**

1. Characterization of $P_{lac}$

2. Attempted characterization of $P_{tet}$, results were not positive

3. Attempted cloning of $P_{lux}$ by Gibson's Assembly- Unsuccessful

**Week 11 (17/8/2015-21/8/2015)**

1. Characterize $P_{bad}$-$P_{lac}$ by overnight induction with varied concentration of Arabinose and constant IPTG (once with the maximum amount and another with minimum i.e. 0 mM IPTG) as inducer.

2. Cloning of LuxR

4. Attempted characterization

**Week 12 (24/8/2015-28/8/2015)**

1. Characterization of $P_{bad}$-$P_{lac}$ by overnight varied induction, and using varied concentration of Arabinose and IPTG.

2. Attempted characterization of $P_{lac}$ - unsuccessful

3. Attempted cloning of $P_{lux}$ GFP $P_{lac}$- unsuccessful

**Week 13 (31/8/2015-4/8/2015)**

1. Characterization of $P_{bad}$-$P_{lac}$ by overnight varied induction, and using varied concentration of Arabinose and IPTG.

2. Characterization of $P_{lac}$